

Calculating Percent Change and Percent Error

Grade 7 math · Test Answer Key · Standards: 7.RP.A.3

Use the scoring notes under each solution. Give partial credit when the change is correct but the wrong value is used as the denominator, and when the percent is right but is not labeled increase or decrease.

Standards: 7.RP.A.3 · **Level:** Grade 7

Question 1 Membership Increase (2 points)

Change: $224 - 175 = 49$.

$49 \div 175 = 0.28 = 28\%$.

28% increase

Scoring: 1 point for the change, 1 point for the percent.

Question 2 Price Decrease (2 points)

Change: $64 - 52.80 = 11.20$.

$11.20 \div 64 = 0.175 = 17.5\%$.

17.5% decrease

Scoring: 1 point for the change, 1 point for the percent.

Question 3 New and Original Prices (3 points)

(a) $250 \times 1.18 = 295$.

(b) $0.85 \times \text{original} = 127.50$, so $\text{original} = 127.50 \div 0.85 = 150$.

(a) \$295; (b) \$150

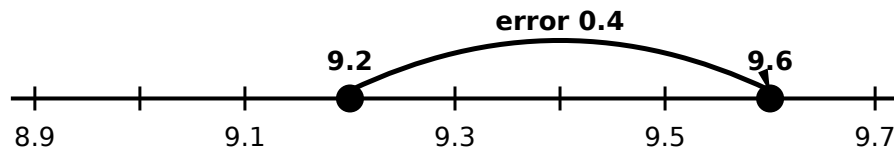
Scoring: 1 point for (a); in (b), 1 point for the equation and 1 point for the answer.

Question 4 Measuring a Pole (3 points)

(a) $9.6 - 9.2 = 0.4$ ft.

(b) $0.4 \div 9.6 \approx 0.0417 = 4.2\%$.

(c) 4.2% is below 5%, so yes.



$\text{Error} = 0.4 \text{ ft}; 0.4 \div 9.6 \approx 4.2\%$.

0.4 ft; 4.2%; yes

Scoring: 1 point per part.

Question 5 Comparing City Growth (3 points)

(a) X: $4,200 \div 42,000 = 10\%$. Y: $1,800 \div 15,000 = 12\%$.

(b) City Y grew faster, although X added more people.

10% and 12%; City Y

Scoring: 1 point for each percent, 1 point for the comparison.

Question 6 Raise Then Cut (3 points)

(a) $40 \times 1.25 = 50$.

(b) $50 \times 0.75 = 37.50$.

(c) No. The change is $37.50 - 40 = -2.50$, and $2.50 \div 40 = 6.25\%$, a 6.25% decrease.



Completed chain.

\$50; \$37.50; no, 6.25% decrease overall

Scoring: 1 point per part.

Question 7 Flour Amounts (2 points)

Change: $3\frac{3}{4} - 2\frac{1}{2} = 1\frac{1}{4}$.

$1\frac{1}{4} \div 2\frac{1}{2} = \frac{5}{4} \times \frac{2}{5} = \frac{1}{2} = 50\%$.

50% increase

Scoring: 1 point for the change, 1 point for the percent.

Question 8 Museum Visitors (2 points)

Jan to Feb: $640 \div 3,200 = 20\%$ increase.

Feb to Mar: $-384 \div 3,840 = 10\%$ decrease.

+20%; -10%

Scoring: 1 point for each percent change.